

Claims

1 1. A formulation comprising at least one anesthetic compound selected
2 from the group consisting of procaine, lidocaine, tetracaine and salts thereof;
3 and a skin penetration enhancer, and a gelling agent in an anhydrous mixture.

1 2. The formulation of claim 1 wherein said skin penetration enhancer is at
2 least one compound selected from the group consisting of: benzyl alcohol,
3 propylene glycol, and ethoxydiglycol.

1 3. The formulation of claim 1 wherein at least two skin penetration
2 enhancers are present.

1 4. The formulation of claim 1 wherein said at least one anesthetic
2 compound is present in said formulation from 1 to 25 total weight percent.

1 5. The formulation of claim 3 further comprising a third skin penetration
2 enhancer.

1 6. The formulation of claim 1 wherein said at least two anesthetic
2 compounds are procaine, lidocaine and tetracaine, or salts thereof.

1 7. The formulation of claim 1 wherein lidocaine is present from 0.5-6 total
2 weight percent.

1 8. The formulation of claim 1 wherein said skin penetration enhancer is
2 present from 0 to 95 total weight percent.

1 9. The formulation of claim 1 wherein said skin penetration enhancer is
2 present from 25 to 45 total weight percent.

1 10. The formulation of claim 1 wherein the gelling agent is a cellulosic
2 polymer.

1 11. The formulation of claim 1 wherein the gelling agent is hydroxypropyl
2 cellulose.

1 12. The formulation of claim 11 wherein the hydroxypropyl cellulose has a
2 viscosity ranging between 1000 and 2000 centipoise at 25 degrees centigrade.

1 13. The formulation of claim 12 wherein the concentration of hydroxypropyl
2 cellulose ranges from 0.5 – 5 total weight percent.

1 14. The formulation of claim 1 further comprising a dispersing agent.

1 15. The formulation of claim 1 further comprising an ingredient selected
2 from the group consisting of: preservative, fragrance, buffer, and an emollient.

- 1 16. The formulation of claim 1 further comprising a therapeutic agent.
- 1 17. The formulation of claim 16 wherein the therapeutic agent is selected
2 from the group consisting of: analgesics, anxiolytic compounds,
3 antiarrhythmics, antibacterials, antibiotics, anticoagulants, anticonvulsants,
4 antifungals, antihistamines, anti-inflammatories, antivirals, bronchodilators,
5 calcium channel blockers, cytotoxics and anticancer agents, cytokines, growth
6 factors, immunosuppressives, muscle relaxants, psychotherapeutics,
7 sympathomimetics, vasodilators, vitamins, and combinations of these.
- 1 18. The formulation of claim 16 wherein the therapeutic agent is an anti-itch
2 compound.
- 1 19. A method for reducing pain sensation, the method comprising the steps
2 of:
3 applying a therapeutically effective amount of an anhydrous gel
4 anesthetic formulation according to claim 1 to the area of an individual's skin
5 to be anesthetized; and
6 allowing the gel anesthetic to remain in contact with the area for a period
7 of time sufficient to reduce pain sensation.
- 1 20. The method of claim 19 further comprising the step of :

2 applying a therapeutically effective amount of an anesthetic formulation
3 comprising a topical anesthetic compound, a skin penetration enhancer and a
4 volatile co-solvent, to the area to be anesthetized.

21. A method for reducing pain associated with the application of laser energy to the skin, said method comprising the step of applying a therapeutically effective amount of a topical anesthetic according to claim 1 to the area of the skin to be treated prior to the application of laser energy.

22. A commercial kit comprising at least one topical anesthetic compound formulated according to claim 1, together with instructions for use thereof as a topical anesthetic.

23. The commercial kit of claim 22 further comprising a second topical
anesthetic, said second topical anesthetic comprising a skin penetration
enhancer and a volatile co-solvent.

24. A method of local anesthesia comprising the step of applying to intact skin or oral mucosa the formula of claim 1.